

Table 1: Summary of Data and Potential Exposure Scenarios				
Description	Locations	Data Results ¹	Potential Impacts/Exposure Scenarios	Data Source(s)
Lead Additive Area	Lead Additive Area	Lead 43,200 – 105,000 mg/kg <u>Water:</u> 2-methylphenol 1.5x10 ⁶ µg/l Phenol 270,000 µg/l 2,4 dimethylphenol 1.3x10 ⁶ µg/l Lead >752 µg/l Benzene 2400 µg/l	Sand Creek (direct discharge/migration to surface water/sediment) Ecological and Human Receptors (direct exposure) Human Receptors (indoor air)	RI Field Data, 2016 LMS, 2016 Removal Assessment, 2016 ESI Wilcox Oil, 1997 ESI Wilcox/Lorraine 2011 Lorraine Refinery SI, 2009 ESI Wilcox Oil, 2012 EPA, unpublished, 2017 EPA, unpublished, 2018
Tank Waste	Lorraine Process Area Tank 1 Tank 3 NTF-1 Tank 10 Tank 11 Tank 12 Pit 1	TPH 23,200 - 875,000 mg/kg Lead 513 – 3,660 mg/kg total xylenes 0.28 – 0.45 mg/kg toluene 0.27 mg/kg PAHs Benzo(a)anthracene 0.76 - 12 mg/kg Benzo(a)pyrene 1.2 - 12 mg/kg Benzo(b)fluoranthene 2.4 - 20 mg/kg Benzo(k)fluoranthene 7.5 mg/kg Chrysene 13 - 37 mg/kg Fluoranthene 2.5 - 17 mg/kg Indeno(1,2,3-cd)pyrene 3.1 – 4.4 mg/kg phenanthrene 27 - 520 mg/kg pyrene 2.1 - 230 mg/kg 2-methylnaphthalene 49 - 1,400 mg/kg		

¹ This column is not all inclusive. This is a limited summary of detected contaminants, specifically listing those with the highest concentrations.

Abbreviations:

TPH=total petroleum hydrocarbon

mg/kg=milligram per kilogram

µg/l=micrograms per liter

ESI=Expanded Site Investigation

SI=Site Investigation

ERT=Environmental Response Team

RI=remedial investigation

PAHs=polycyclic aromatic hydrocarbons

LMS= Lockheed Martin SERAS

Table 2: Passive Soil Gas and Indoor Air/Sub-slab Data

Passive Soil Gas Results	
COMPOUNDS	Result: ng
Benzene	8652
Toluene	2,682
Ethylbenzene	8,453
p & m-Xylene	15,656
o-Xylene	6,326
Naphthalene	2,145
2-Methylnaphthalene	10,027

Results are nanograms (ng). There are no screening numbers for mass comparison. Data presented are the highest recorded results.

Indoor Air/Sub-slab		
Analyte	Result: ($\mu\text{g}/\text{m}^3$) ¹	Health-Based Screening Level ($\mu\text{g}/\text{m}^3$) ²
Chloroform	0.93	0.12
1,4-Dichlorobenzene	1.08	0.26
Benzene	5.57	0.36
Ethylbenzene	1.44	1.1
1,3-Butadiene	11.7	0.094
Trichlorofluoromethane	43.4	--
(--) : no health based screening number available. 1-Results are micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Data presented are the highest recorded results. 2-Regional Screening Levels for Chemical Contaminants at Superfund Sites, November 2017		

Table 3: Comparison of site data to Health Based Screening Levels¹				
	Contaminant	Data Results (mg/kg)	Health-Based Screening Level (mg/kg)	Health-Based Screening Level Basis
Lead Additive Area	Lead	105,000	800	Protection of blood lead levels in workers
Tank Waste	Benzo(a)anthracene	12	1.1	Residential Cancer Screening Number at 10-6 Risk
	Benzo(a)pyrene	12	0.11	Residential Cancer Screening Number at 10-6 Risk
	Benzo(b)fluoranthene	20	1.1	Residential Cancer Screening Number at 10-6 Risk
	Indeno(1,2,3-cd)pyrene	4.4	1.1	Residential Cancer Screening Number at 10-6 Risk
	2-methylnaphthalene	1400	240	Residential Non-cancer Screening Number at Hazard Index=1
	Naphthalene	14	3.8	Residential Cancer Screening Number at 10-6 Risk
	<u>Water (result of migration from source material)</u>			
		Data Results (µg/l)	Health-Based Screening number (µg/l)	Health-Based Screening Number Basis
	2-methylphenol	1.5x10 ⁶	930	Residential Non-Cancer Screening Number at Hazard Index=1 for Drinking Water
	Phenol	270,000	5800	Residential Non-Cancer Screening Number at Hazard Index=1 for Drinking Water
	2,4 dimethylphenol	1.3x10 ⁶	360	Residential Non-Cancer Screening Number at Hazard Index=1 for Drinking Water
	Lead	>752	15	Action Level for Drinking Water
	Benzene	2400	5	Maximum Contaminant Level for Drinking Water
1- Regional Screening Levels for Chemical Contaminants at Superfund Sites, November 2017 mg/kg=milligram per kilogram µg/l=micrograms per liter Data presented are the highest recorded results.				

Table 4: Areas of Remediation – Estimated Volume	
Area Name	Volume Estimated (cubic yards)
Lorraine Waste	953
Lead Additive Area	2,269
Tank 1	3,323
Tank 3	3,608
NTF-1	818
Tank 10	9,902
Tank 11	431
Tank 12	4,788
Pit 1	4,270
Total	30,362 (5 Acres)

Table 5: Source Material Health-Based Target Levels¹			
Contaminant	Data Results (mg/kg)	Health Based Target Level (mg/kg)	Health-Based Target Level Basis
Lead	105,000	800	Protection of blood lead levels in workers
Benzo(a)pyrene	12	0.11	Residential Cancer Screening Number at 10 ⁻⁶ Risk
1- Regional Screening Levels for Chemical Contaminants at Superfund Sites, November 2017 mg/kg = milligram per kilogram			